PATENT SPECIFICATION (11) 1240275

1240275

DRAWINGS ATTACHED

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A4H W1J W2A W2H W2X
E2A E14U

(54) AN ASSEMBLY FOR SECURING TOGETHER ELEMENTS FORMED OF SHEET MATERIAL

(71) I, YVES DIDRY, a French Citizen, of 44 Avenue Paul Vaillant Couturier, Montreuil Sous Bois, France, do hereby declare

the invention, for which I pray that a Patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement: —

The present invention relates to an assembly for securing together elements formed of sheet material.

According to the present invention there is provided an assembly for securing together juxtaposed marginal parts of elements formed of sheet material, such assembly comprising a stirrup, the limbs of which, in use, straddle the said parts, and a resiliently deformable clip, the stirrup including an abutment, the clip in use acting between the abutment and an abutment of one of the said parts.

Various embodiments of the invention will now be described by way of example and with reference to the accompanying drawings, wherein: —

Figures 1 and 2 show in perspective and in section respectively an assembly in accordance with a first embodiment of the invention securing together two sheet metal elements;

Figures 3 and 4 show in perspective and in section respectively an assembly in accordance with a second embodiment of the invention securing together two sheet metal elements;

Figures 5 and 6 shows in perspective and in section respectively an assembly in accordance with a third embodiment of the invention securing together three sheet metal elements;

Figures 7 and 8 show in perspective and in section respectively an assembly in accordance with a fourth embodiment of the invention securing together two sheet metal elements;

Figures 9 and 10 show in perspective and in section respectively an assembly in accordance with a fifth embodiment of the invention securing together two sheet metal elements;

Figures 11 and 12 show in perspective and in section respectively an assembly in accordance with a sixth embodiment of the invention securing together two sheet metal elements; and

Figures 13 and 14 show in perspective and in section respectively an assembly in accordance with a seventh embodiment of the invention securing together two sheet metal elements.

Referring initially to Figures 1 and 2 marginal parts of elements 1 and 2 formed of sheet metal are juxtaposed. The marginal parts are of channel section having abutting webs 1′ and 2′ and inturned flanges 1″ and 2″ constituting lips. The limbs of a stirrup 3 straddle the marginal parts. Each limb has two right angled cranks to define a rectangular recess 3′. A resiliently flexible clip 4 acts between the abutment defined by the angle between the outer wall of the corresponding recess 3′ and the base of the recess and the abutment defined by the angle between the lip and the web 1′ or 2′. Each clip 4 is formed of a strip of spring steel which is bent into an arcuate configuration.

Figures 3 and 4 show an arrangement generally similar to that shown in Figures 1 and 2. One of the elements 1 is a corner element and only one clip 4 is used. A spot weld 6 secures the limb of the stirrup which is not clipped to its sheet metal element.

Figures 5 and 6 show an assembly similar to that shown in Figures 1 and 2. The angled edge part 5′ of a further sheet metal element is trapped between the outer wall and the base of one of the recesses 3′.

Figures 7 and 8 again show an assembly similar to Figures 1 and 2 wherein one of the sheet metal elements has a 90° bend.

Figures 9 and 10 show another assembly wherein one of the sheet metal elements 2 is similar to that described with reference to

Figures 1 and 2. The other sheet metal element 14 has the marginal part thereof doubly cranked into a Z formation having the edge lip 14′ outwardly directed. The lip 2″ nests within the lip 14′. A stirrup 11 has one limb thereof doubly cranked to define a rectangular recess 11 facing the closed side of the stirrup and one clip 4 acts in the manner described with reference to Figures 1 and 2.

Referring now to Figures 11 and 12, the stirrup 19 illustrated therein is of rectangular channel section having the end parts of the limbs inturned to define lips 19′. Sheet metal elements 17 and 18 generally similar to those designated 1 and 2 in Figures 1 and 2 have juxtaposed channel shaped marginal parts having webs 17′ and 18′ and lips 17″ and 18″. Clips 4 as previously described act between the angles between the lips 19′ and the limbs of the stirrup and the angles defined between the lips 17″, 18″ and the webs 17′, 18′.

Figures 13 and 14 show a stirrup 15 of rectangular channel section having a lip 15′ on one limb only and a clip 16 clipping together sheet metal elements 14 and 2 as shown in Figures 9 and 10 of the drawings. The clip 16 is described in the Complete Specification of our co-pending Patent Application No. 48075/68 Serial No. 1244025, and comprises a strip of spring steel having the end parts thereof inclined to the central part. The clip 4 shown in Figures 1 to 12 may be replaced by the clip described and claimed in the Complete Specification of our co-pending Patent Application No. 48077/68 Serial No. 1235719.

WHAT I CLAIM IS:—

1. An assembly for securing together juxtaposed marginal parts of elements formed of sheet material, such assembly comprising a stirrup, the limbs of which, in use, straddle the said parts, and a resiliently deformable clip, the stirrup including an abutment, the clip in use acting between the abutment and an abutment of one of the said parts.

2. An assembly as claimed in Claim 1 wherein at least one of the limbs has first and second cranks to define a recess, the second crank being disposed outside the first crank, the second crank providing the abutment of the stirrup.

3. An assembly as claimed in Claim 1 wherein at least one limb of the stirrup is inturned to define a lip, the angle between the lip and the remainder of the limb providing the abutment of the stirrup.

4. Assemblies substantially as hereinbefore described with reference to and as shown in Figures 1 and 2, Figures 3 and 4, Figures 5 and 6, Figures 7 and 8, Figures 9 and 10, Figures 11 and 12 or Figures 13 and 14 of the accompanying drawings.

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1240275 COMPLETE SPECIFICATION
4 SHEETS *This drawing is a reproduction of the Original on a reduced scale*
Sheet 1

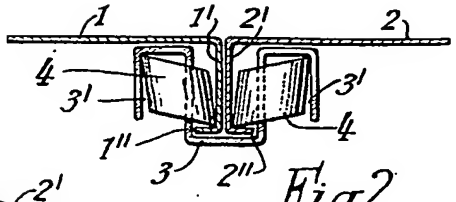

Fig.2.

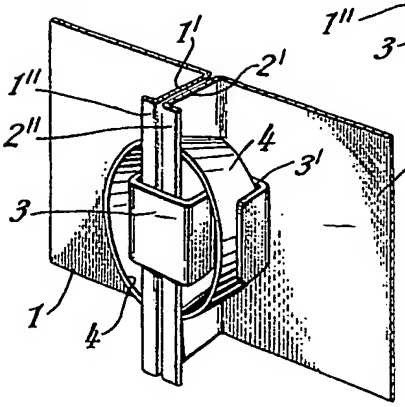

Fig.1.

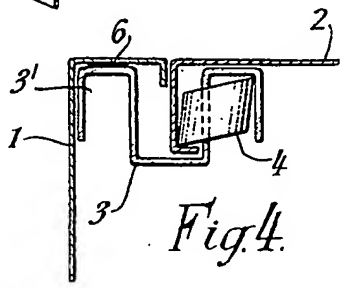

Fig.4.

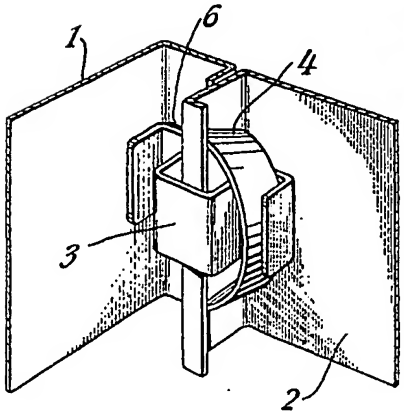

Fig.3

1240275 COMPLETE SPECIFICATION
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Sheet 2

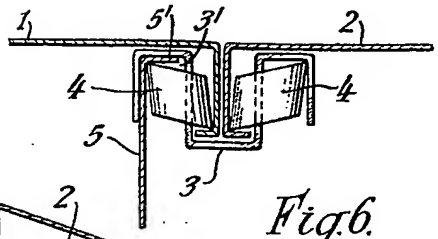

Fig.6.

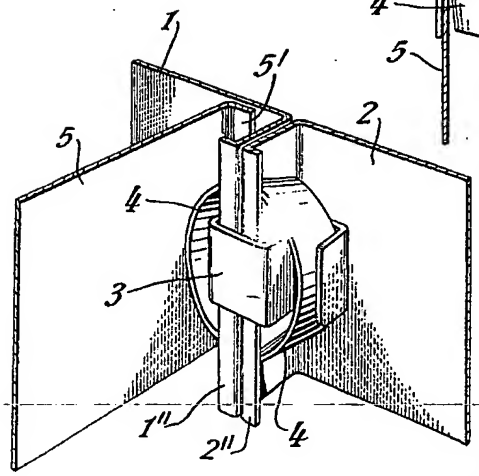

Fig.5.

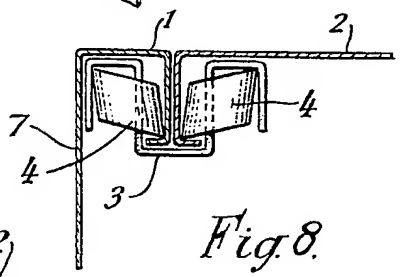

Fig.8.

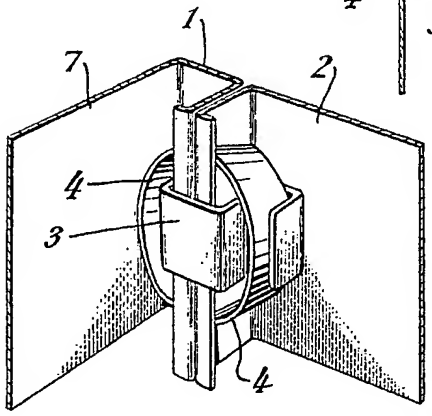

Fig.7.

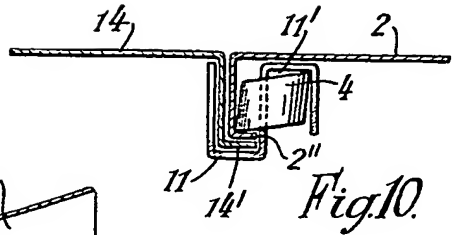

Fig.10.

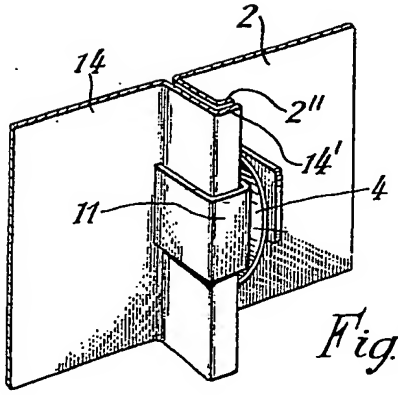

Fig.9.

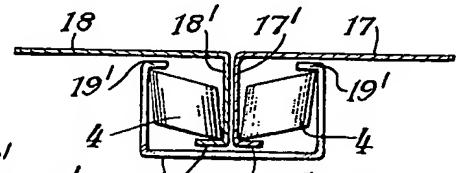

Fig.12.

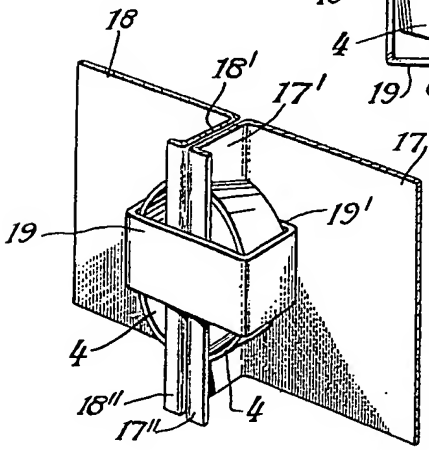

Fig.11.

1240275 COMPLETE SPECIFICATION
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Sheet 4

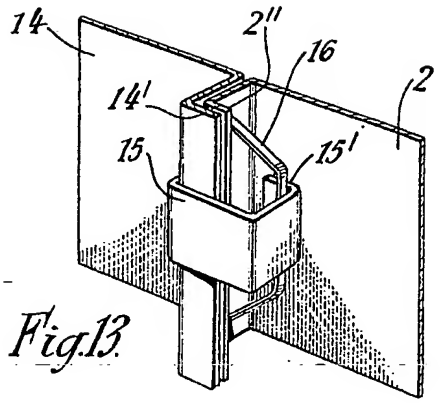

Fig.13.

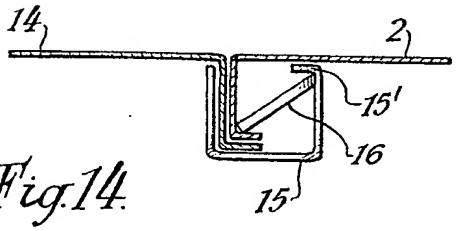

Fig.14.